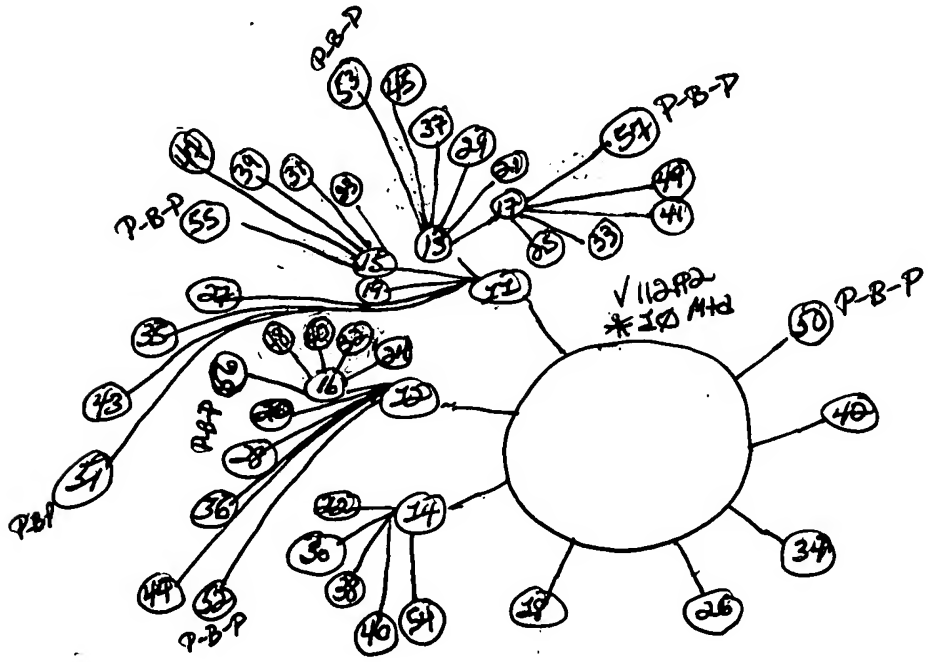
Joseph S. Armstrong
Tel# (703) 836-6400

10/576,205
4903 3/21/2006

Examiner's Notes

Cancelled claims 1-9 Cls 42-57, find a product to reflect claims.
IDS (12/19/2005) initialed, reviewed & considered.

S (single or mono) (8a) (crystal?)
S (Cz or czochralski)
S (pulling (4a) rate #) (10a) (V (2w) mm/mm)
S (temperature (3w) gradient #)
S (GC) (10a) (C/mm)
S (N (8a) region or N (2w) region) (10a) (whole (4a) plane)
S (radial (w) direction #)



112 ¶2: Rej

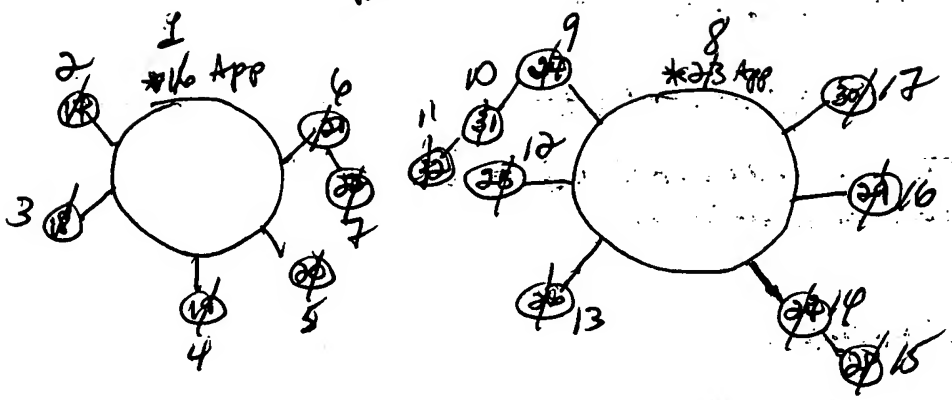
Claim 20, line 15, "...desired defect region..."

Allowable Subject Matter:
Claims 18-41 (Objection)

103 Rej:
~~Claims 1-9, 42-57~~
Claims 10-17 & 43-57.

Motivation:

5,608,821 49



Old	New
16	1
17	2
18	3
19	4
20	5
21	6
22	7
23	8
24	9
25	12
26	13
27	14
28	15
29	16
30	17
31	10
32	11

11/~~356,381~~ ~~US2003185960~~

11/~~356~~,379

JP 2003-185960
11/356,414

Search History

STN

(HCAPLUS, INSPEC, JAPIO, USPATALL, INPADOC)

4/27/2007

=> d l9 abs,bib

L9 ANSWER 1 OF 1 USPATFULL on STN

AB The present invention is a method for producing a single crystal with pulling the single crystal from a raw material melt by CZ method, wherein when growing the single crystal, where a pulling rate is defined as V, a temperature gradient of the crystal at a central portion of the crystal is defined as Gc, and a temperature gradient of the crystal at a peripheral portion of the crystal is defined as Ge, the temperature gradient Gc at the central portion of the crystal and the temperature gradient Ge at the peripheral portion of the crystal are controlled by changing a distance between the melt surface of the raw material melt and a heat insulating member provided so as to oppose to the surface of the raw material melt, thereby difference ΔG between the temperature gradient Gc at the central portion of the crystal and the temperature gradient Ge at the peripheral portion of the crystal is 0.5° C./mm or less, and also V/Gc which is a ratio of the pulling rate V and the temperature gradient Gc at the central portion of the crystal is controlled so that a single crystal including a desired defect region can be grown. Thereby, there is provided a method for producing a single crystal in which when the single crystal is grown by CZ method, V/G can be controlled without lowering the pulling rate V, and thus the single crystal including a desired defect region over a whole plane in the radial direction entirely in the direction of the crystal growth axis can be produced effectively for a short time and at high yield.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 2006:155224 USPATFULL

TI Process for producing single crystal and single crystal

IN Sakurada, Masahiro, Fukushima, JAPAN

PI US 2006130740 A1 20060622

AI US 2004-561205 A1 20040528 (10)
WO 2004-JP7349 20040528
20060203 PCT 371 date

PRAI JP 2003-185960 20030627

DT Utility

FS APPLICATION

LREP OLIFF & BERRIDGE, PLC, P.O. BOX 19928, ALEXANDRIA, VA, 22320, US

CLMN Number of Claims: 49

ECL Exemplary Claim: 1-9

DRWN 5 Drawing Page(s)

LN.CNT 1249

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> d his

(FILE 'HOME' ENTERED AT 03:07:26 ON 27 APR 2007)

FILE 'HCAPLUS, INSPEC, JAPIO, USPATFULL, USPAT2, INPADOC' ENTERED AT 03:07:54 ON 27 APR 2007

L1 591728 S (SINGLE OR MONO)(8A)(CRYSTAL?)

L2 17763 S (CZ OR CZOCHARSKI)

L3 0 S (PULL?(6A)RATE#)(8A)(V(2W)MM/MM)

L4 4 S (PULL?(8A)RATE#)(8A)(V(W)MM(W)MM)

L5 69653 S (TEMPERATURE(3W)GRADIENT#)

L6 25 S (GC)(8A)(C(W)MM)

L7 29 S (N(8A)REGION OR N(2W)REGION)(8A)(WHOLE(4A)PLANE)

```
L8        189808 S (RADIAL(W)DIRECTION#)
L9             1 S L1 AND L2 AND L5 AND L6 AND L7

=>
```

=> d l10 1-16 abs,bib

L10 ANSWER 1 OF 16 JAPIO (C) 2007 JPO on STN
AN 2005-015313 JAPIO
AB PROBLEM TO BE SOLVED: To provide a method for manufacturing a single crystal, in which the single crystal wherein the whole area in the crystal diameter direction becomes a desired defect area over the whole area of the crystal growth axis direction can be efficiently manufactured in a short period of time with a high yield by controlling the ratio V/G without reducing the pulling speed V when the single crystal is grown by a Czochralski (CZ) method.
SOLUTION: In the method for manufacturing the single crystal by pulling it from a raw material melt by the CZ method, when the single crystal is grown, and when the pulling speed is expressed as V, the temperature gradient at the central part of the crystal is expressed as Gc, and the temperature gradient at the peripheral part of the crystal is expressed as Ge, the difference ΔG between the temperature gradient Gc at the central part of the crystal and the temperature gradient Ge at the peripheral part of the crystal is adjusted to be <=0.5°C/mm, and at the same time, the ratio V/Gc of the pulling speed V to the temperature gradient Gc at the central part of the crystal is controlled so as to grow the single crystal having the desired defect area by controlling the crystal temperature gradient Gc and the temperature gradient Ge by changing the interval between the surface of the raw material melt and a heat-shielding member arranged oppositely to the surface of the melt.
COPYRIGHT: (C)2005,JPO&NCIPI
AN 2005-015313 JAPIO
TI METHOD FOR MANUFACTURING SINGLE CRYSTAL, AND SINGLE CRYSTAL
IN SAKURADA MASAHIRO; IIDA MAKOTO; MITAMURA NOBUAKI; OZAKI ATSUSHI
PA SHIN ETSU HANDOTAI CO LTD
PI JP 2005015313 A 20050120 Heisei
AI JP 2003-185960 (JP2003185960 Heisei) 20030627
PRAI JP 2003-185960 20030627
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2005

L10 ANSWER 2 OF 16 JAPIO (C) 2007 JPO on STN
AN 2001-106591 JAPIO
AB PROBLEM TO BE SOLVED: To provide a method for producing a high quality single crystal having a large diameter and a long size, which is almost free from Grown-in defects such as COP or dislocation cluster.
SOLUTION: This method of producing a single crystal comprises pulling up the single crystal under the condition such that, when the temperature T(°C) at the center part of the single crystal being pulled up is in the range of >=1,230°C, the Gc/Gp satisfies formulas: Gc/Gp>=-0.007T+10.62 (when T is >1,360°C) and Gc/Gp>=1 (when T is in the range of 1,230 to 1,360°C), wherein Gc (°C/mm) is the temperature gradient in the direction of a pulling-up shaft at the center part of a plane perpendicular to the pulling-up shaft and Gp (°C/mm) is the temperature gradient in the direction of the pulling-up shaft at the peripheral part of the plane perpendicular to the pulling-up shaft, at the temperature T. Such temperature condition is realized by arranging a heat shielding material, whose inner diameter becomes larger toward the upper direction, at the peripheral part of the single crystal being pulled up in such a manner that a space is provided between the lower end of the heat shielding material and the surface of a melt.

COPYRIGHT: (C)2001,JPO
AN 2001-106591 JAPIO
TI METHOD FOR PRODUCING CZ SILICON SINGLE CRYSTAL
IN NISHIKAWA HIDESHI; NOMACHI TAKESHI
PA SUMITOMO METAL IND LTD
PI JP 2001106591 A 20010417 Heisei
AI JP 1999-282725 (JP11282725 Heisei) 19991004
PRAI JP 1999-282725 19991004
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2001

L10 ANSWER 3 OF 16 USPATFULL on STN
AB This apparatus for manufacturing a semiconductor single crystal includes: a crucible; a heater; a crucible driving unit; a chamber for housing the crucible and the heater; and a hydrogen mixed gas supplying device for supplying into the chamber a hydrogen mixed gas including an inert gas in admixture with a hydrogen-containing gas that contains hydrogen atoms, wherein the hydrogen mixed gas supplying device includes: a hydrogen-containing gas supply unit; an inert gas supply unit; a hydrogen-containing gas flow rate controller; an inert gas flow rate controller; and a buffer tank for mixing together the hydrogen-containing gas and the inert gas so as to form a hydrogen mixed gas and for holding the hydrogen mixed gas.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 2006:330770 USPATFULL
TI Apparatus for manufacturing semiconductor single crystal
IN Sugimura, Wataru, Tokyo, JAPAN
Ono, Toshiaki, Tokyo, JAPAN
Hourai, Masataka, Tokyo, JAPAN
PA SUMCO CORPORATION, Tokyo, JAPAN (non-U.S. corporation)
PI US 2006283381 A1 20061221
AI US 2006-328099 A1 20060110 (11)
PRAI JP 2005-180002 20050620
US 2005-693946P 20050627 (60)
DT Utility
FS APPLICATION
LREP PILLSBURY WINTHROP SHAW PITTMAN, LLP, P.O. BOX 10500, MCLEAN, VA, 22102, US
CLMN Number of Claims: 13
ECL Exemplary Claim: 1
DRWN 5 Drawing Page(s)
LN.CNT 931
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 4 OF 16 USPATFULL on STN
AB In a method for growing a silicon single crystal, a silicon single crystal is grown by the Czochralski method to have an oxygen concentration of 12+10.sup.17 to 18+10.sup.17 atoms/cm.sup.3 on ASTM-F121 1979. A mixed gas of an inert gas and a gaseous substance containing hydrogen atoms is used as an atmospheric gas for growing the single crystal. A temperature of the silicon single crystal is controlled during the growth of the crystal such that the ratio Gc/Ge of an axial thermal gradient Gc at the central portion of the crystal between its melting point and its temperature of 1350° C. to an axial thermal gradient Ge at the periphery of the crystal between its melting point and its temperature of 1350° C. is 1.1 to 1.4. The axial thermal gradient Gc at the central portion of the crystal is 3.0 to 3.5° C./mm.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 2006:330768 USPATFULL
TI Method for growing silicon single crystal and method

for manufacturing silicon wafer
IN Inami, Shuichi, Ogi-shi, JAPAN
Takase, Nobumitsu, Saga-shi, JAPAN
Kogure, Yasuhiro, Saga-shi, JAPAN
Hamada, Ken, Saga-shi, JAPAN
Nakamura, Tsuyoshi, Saga-shi, JAPAN
PA SUMCO CORPORATION, Tokyo, JAPAN (non-U.S. corporation)
PI US 2006283379 A1 20061221
AI US 2006-356414 A1 20060217 (11)
PRAI JP 2005-179997 20050620
US 2005-693977P 20050627 (60)
DT Utility
FS APPLICATION
LREP PILLSBURY WINTHROP SHAW PITTMAN, LLP, P.O. BOX 10500, MCLEAN, VA, 22102, US
CLMN Number of Claims: 9
ECL Exemplary Claim: 1
DRWN 5 Drawing Page(s)
LN.CNT 1024
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 5 OF 16 USPATFULL on STN
AB This method for producing silicon single crystals includes: growing a silicon single crystal by the Czochralski method while cooling at least part of the silicon single crystal under growth with a cooling member which circumferentially surrounds the silicon single crystal and has an inner contour that is coaxial with a pull axis, wherein an ambient gas in which the silicon single crystal is grown includes a hydrogen-atom-containing substance in gaseous form. This silicon single crystal is produced by the above method.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 2006:330766 USPATFULL
TI Method for producing silicon single crystals and silicon single crystal produced thereby
IN Inami, Shuichi, Tokyo, JAPAN
Murakami, Hiroki, Tokyo, JAPAN
Takase, Nobumitsu, Tokyo, JAPAN
Hamada, Ken, Tokyo, JAPAN
Nakamura, Tsuyoshi, Tokyo, JAPAN
PA SUMCO CORPORATION, Tokyo, JAPAN (non-U.S. corporation)
PI US 2006283377 A1 20061221
AI US 2006-406272 A1 20060419 (11)
PRAI JP 2005-179996 20050620
US 2005-693947P 20050627 (60)
DT Utility
FS APPLICATION
LREP PILLSBURY WINTHROP SHAW PITTMAN, LLP, P.O. BOX 10500, MCLEAN, VA, 22102, US
CLMN Number of Claims: 7
ECL Exemplary Claim: 1
DRWN 6 Drawing Page(s)
LN.CNT 1097
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 6 OF 16 USPATFULL on STN
AB This apparatus for manufacturing a semiconductor single crystal includes: a crucible; a heater; a crucible driving unit; a chamber for housing the crucible and the heater; and a hydrogen mixed gas supplying device for supplying into the chamber a hydrogen mixed gas including an inert gas in admixture with a hydrogen-containing gas that contains hydrogen atoms, wherein the hydrogen mixed gas supplying device

includes: a hydrogen-containing gas supply unit; an inert gas supply unit; a hydrogen-containing gas flow rate controller; an inert gas flow rate controller; and a gas mixing unit for uniformly mixing together the hydrogen-containing gas and the inert gas so as to form a hydrogen mixed gas.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 2006:330765 USPATFULL
TI Apparatus for manufacturing semiconductor single crystal
IN Sugimura, Wataru, Tokyo, JAPAN
Ono, Toshiaki, Tokyo, JAPAN
Hourai, Masataka, Tokyo, JAPAN
PA SUMCO Corporation, Tokyo, JAPAN (non-U.S. corporation)
PI US 2006283376 A1 20061221
AI US 2006-334536 A1 20060119 (11)
PRAI JP 2005-180001 20050620
US 2005-693945P 20050627 (60)
DT Utility
FS APPLICATION
LREP PILLSBURY WINTHROP SHAW PITTMAN, LLP, P.O. BOX 10500, MCLEAN, VA, 22102, US
CLMN Number of Claims: 10
ECL Exemplary Claim: 1
DRWN 4 Drawing Page(s)
LN.CNT 802
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 7 OF 16 USPATFULL on STN
AB In the present invention, when growing a silicon single crystal free of grown-in defects by the CZ method, the crystal is pulled out at or in a vicinity of a critical pulling rate at which a ring-shaped OSF occurrence region vanishes in a center portion of the crystal by using a hot zone structure in which a temperature gradient Gc in a center portion of the crystal is equal to or greater than a temperature gradient Ge in a peripheral portion of the crystal, while supplying an inert gas including hydrogen to an interior of a pulling furnace. By means of the present invention, the critical pulling rate at which the ring-shaped OSF occurrence region vanishes in the center portion of the crystal is increased, and single crystals free of grown-in defects in which dislocation clusters and COPs do not exist over the entire crystal radial direction in the as-grown state, can be grown by pulling at a pulling rate higher an that in the prior art.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 2006:185541 USPATFULL
TI Silicon wafer, process for producing the same and method of growing silicon single crystal
IN Hourai, Masataka, Tokyo, JAPAN
Sugimura, Wataru, Tokyo, JAPAN
Ono, Toshiaki, Tokyo, JAPAN
Tanaka, Tadami, Tokyo, JAPAN
PA SUMCO CORPORATION, Tokyo, JAPAN (non-U.S. corporation)
PI US 2006156969 A1 20060720
AI US 2004-546600 A1 20040225 (10)
WO 2004-JP2239 20040225
20050823 PCT 371 date
PRAI JP 2003-4765 20030225
DT Utility
FS APPLICATION
LREP PILLSBURY WINTHROP SHAW PITTMAN, LLP, P.O. BOX 10500, MCLEAN, VA, 22102, US

CLMN Number of Claims: 12
ECL Exemplary Claim: 1
DRWN 9 Drawing Page(s)
LN.CNT 1003
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 8 OF 16 USPATFULL on STN
AB The present invention is a method for producing a single crystal with pulling the single crystal from a raw material melt by CZ method, wherein when growing the single crystal, where a pulling rate is defined as V, a temperature gradient of the crystal at a central portion of the crystal is defined as Gc, and a temperature gradient of the crystal at a peripheral portion of the crystal is defined as Ge, the temperature gradient Gc at the central portion of the crystal and the temperature gradient Ge at the peripheral portion of the crystal are controlled by changing a distance between the melt surface of the raw material melt and a heat insulating member provided so as to oppose to the surface of the raw material melt, thereby difference ΔG between the temperature gradient Gc at the central portion of the crystal and the temperature gradient Ge at the peripheral portion of the crystal is 0.5° C./mm or less, and also V/Gc which is a ratio of the pulling rate V and the temperature gradient Gc at the central portion of the crystal is controlled so that a single crystal including a desired defect region can be grown. Thereby, there is provided a method for producing a single crystal in which when the single crystal is grown by CZ method, V/G can be controlled without lowering the pulling rate V, and thus the single crystal including a desired defect region over a whole plane in the radial direction entirely in the direction of the crystal growth axis can be produced effectively for a short time and at high yield.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 2006:155224 USPATFULL
TI Process for producing single crystal and single crystal
IN Sakurada, Masahiro, Fukushima, JAPAN
PI US 2006130740 A1 20060622
AI US 2004-561205 A1 20040528 (10)
WO 2004-JP7349 20040528
20060203 PCT 371 date
PRAI JP 2003-185960 20030627
DT Utility
FS APPLICATION
LREP OLIFF & BERRIDGE, PLC, P.O. BOX 19928, ALEXANDRIA, VA, 22320, US
CLMN Number of Claims: 49
ECL Exemplary Claim: 1-9
DRWN 5 Drawing Page(s)
LN.CNT 1249
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 9 OF 16 USPATFULL on STN
AB There is disclosed a method for producing a silicon single crystal in accordance with the Czochralski method wherein a crystal is pulled with controlling a temperature in a furnace so that ΔG may be 0 or a negative value, where ΔG is a difference between the temperature gradient Gc (° C./mm) at the center of a crystal and the temperature gradient Ge (° C./mm) at the circumferential portion of the crystal, namely ΔG=(Ge-Gc), wherein G is a temperature gradient in the vicinity of a

solid-liquid interface of a crystal from the melting point of silicon to 1400° C., and with controlling a pulling rate in a range between a pulling rate corresponding to a minimum value of the inner line of OSF region and a pulling rate corresponding to a minimum value of the outer line, when OSF region is generated in an inverted M belt shape in a defect distribution chart which shows a defect distribution in which the horizontal axis represents a diameter of the crystal and the vertical axis represent a pulling rate. There can be provided a method of producing a silicon single crystal wafer by CZ method wherein OSF in the ring shape distribution generated when being subjected to thermal oxidation or latent nuclei of OSF is present in a low density, and neither FPD, COP, L/D, LSTD nor defect detected by Cu decoration is present under a stable manufacture condition.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 2001:87960 USPATFULL
TI Silicon single crystal wafer and a method for producing it
IN Sakurada, Masahiro, Fukushima-ken, Japan
Yamanaka, Hideki, Fukushima-ken, Japan
Ohta, Tomohiko, Fukushima-ken, Japan
PA Shin-Etsu Handotai Co., Ltd.,, Tokyo, Japan (non-U.S. corporation)
PI US 2001000093 A1 20010405
US 6482260 B2 20021119
AI US 2000-727275 A1 20001130 (9)
RLI Division of Ser. No. US 1999-328278, filed on 8 Jun 1999, PENDING
PRAI JP 1998-179710 19980611
DT Utility
FS APPLICATION
LREP HOGAN & HARTSON L.L.P., 500 S. GRAND AVENUE, SUITE 1900, LOS ANGELES, CA, 90071-2611
CLMN Number of Claims: 20
ECL Exemplary Claim: 1
DRWN 3 Drawing Page(s)
LN.CNT 768
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 10 OF 16 USPATFULL on STN
AB There is disclosed a method for producing a silicon single crystal in accordance with the Czochralski method wherein a crystal is pulled with controlling a temperature in a furnace so that ΔG may be 0 or a negative value, where ΔG is a difference between the temperature gradient Gc (° C./mm) at the center of a crystal and the temperature gradient Ge (° C./mm) at the circumferential portion of the crystal, namely ΔG=(Ge-Gc), wherein G is a temperature gradient in the vicinity of a solid-liquid interface of a crystal from the melting point of silicon to 1400° C., and with controlling a pulling rate in a range between a pulling rate corresponding to a minimum value of the inner line of OSF region and a pulling rate corresponding to a minimum value of the outer line, when OSF region is generated in an inverted M belt shape in a defect distribution chart which shows a defect distribution in which the horizontal axis represents a diameter of the crystal and the vertical axis represent a pulling rate. There can be provided a method of producing a silicon single crystal wafer by CZ method wherein OSF in the ring shape distribution generated when being subjected to thermal oxidation or latent nuclei of OSF is present in a low density, and neither FPD, COP, L/D, LSTD nor defect detected by Cu decoration is present under a stable manufacture condition.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 2001:25219 USPATFULL
TI Silicon single crystal wafer and method for producing it
IN Sakurada, Masahiro, Fukushima-ken, Japan
Yamanaka, Hideki, Fukushima-ken, Japan
Ohta, Tomohiko, Fukushima-ken, Japan
PA Shin-Etsu Handotai Co., Ltd., Tokyo, Japan (non-U.S. corporation)
PI US 6190452 B1 20010220
AI US 1999-328278 19990608 (9)
PRAI JP 1998-179710 19980611
DT Utility
FS Granted
EXNAM Primary Examiner: Hiteshen, Felisa
LREP Hogan & Hartson, LLP
CLMN Number of Claims: 16
ECL Exemplary Claim: 1
DRWN 9 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 759
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 11 OF 16 USPAT2 on STN
AB There is disclosed a method for producing a silicon single crystal in accordance with the Czochralski method wherein a crystal is pulled with controlling a temperature in a furnace so that ΔG may be 0 or a negative value, where ΔG is a difference between the temperature gradient Gc (°C./mm) at the center of a crystal and the temperature gradient Ge (°C./mm) at the circumferential portion of the crystal, namely ΔG=(Ge-Gc), wherein G is a temperature gradient in the vicinity of a solid-liquid interface of a crystal from the melting point of silicon to 1400° C., and with controlling a pulling rate in a range between a pulling rate corresponding to a minimum value of the inner line of OSF region and a pulling rate corresponding to a minimum value of the outer line, when OSF region is generated in an inverted M belt shape in a defect distribution chart which shows a defect distribution in which the horizontal axis represents a diameter of the crystal and the vertical axis represent a pulling rate. There can be provided a method of producing a silicon single crystal wafer by CZ method wherein OSF in the ring shape distribution generated when being subjected to thermal oxidation or latent nuclei of OSF is present in a low density, and neither FPD, COP, L/D, LSTD nor defect detected by Cu decoration is present under a stable manufacture condition.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 2001:87960 USPAT2
TI Silicon single crystal wafer and a method for producing it
IN Sakurada, Masahiro, Fukushima-ken, JAPAN
Yamanaka, Hideki, Fukushima-ken, JAPAN
Ohta, Tomohiko, Fukushima-ken, JAPAN
PA Shin-Etsu Handotai Co., Ltd., Tokyo, JAPAN (non-U.S. corporation)
PI US 6482260 B2 20021119
AI US 2000-727275 20001130 (9)
RLI Division of Ser. No. US 1999-328278, filed on 8 Jun 1999, now patented, Pat. No. US 6190452
PRAI JP 1998-179710 19980611
DT Utility
FS GRANTED
EXNAM Primary Examiner: Hiteshew, Felisa
LREP Hogan & Hartson, LLP
CLMN Number of Claims: 4
ECL Exemplary Claim: 1

DRWN 9 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 692
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 12 OF 16 INPADOC COPYRIGHT 2007 EPO on STN

LEVEL 1
AN 303925879 INPADOC ED 20060706 EW 200627 UP 20060706 UW 200627
TI Process for producing single crystal and single crystal.
IN SAKURADA MASAHIRO
INS SAKURADA MASAHIRO
INA JP
PAS SAKURADA MASAHIRO
PAA JP
TL English
LA English
DT Patent
PIT USAA PATENT APPLICATION PUBLICATION (PRE-GRANT)
PI US 2006130740 AA 20060622
AI US 2006-561205 A 20060203
PRAI JP 2003-185960 A 20030627 (EDPR 20050120)
WO 2004-JP7349 W 20040528 (EDPR 20060330)

L10 ANSWER 13 OF 16 INPADOC COPYRIGHT 2007 EPO on STN

LEVEL 1
AN 302984550 INPADOC ED 20060616 EW 200624 UP 20060616 UW 200624
TI Silicon single crystal wafer and a method for producing it.
IN SAKURADA, MASAHIRO; YAMANAKA, HIDEKI; OHTA, TOMOHIKO
INS SAKURADA MASAHIRO; YAMANAKA HIDEKI; OHTA TOMOHIKO
INA JP; JP; JP
PA SHIN-ETSU HANDOTAI CO., LTD.
PAS SHINETSU HANDOTAI KK
PAA JP
TL English
DT Patent
PIT TWB PATENT
PI TW 233455 B 20050601
AI TW 1999-109055 A 19990601
PRAI JP 1998-179710 A 19980611 (EDPR 19991220)

L10 ANSWER 14 OF 16 INPADOC COPYRIGHT 2007 EPO on STN

LEVEL 1
AN 252664535 INPADOC ED 20050120 EW 200503 UP 20060323 UW 200612
TI PROCESS FOR PRODUCING SINGLE CRYSTAL AND SINGLE CRYSTAL.
PROCEDE DE PRODUCTION D'UN MONOCRISTAL ET MONOCRISTAL.
IN SAKURADA, MASAHIRO; IIDA, MAKOTO; MITAMURA, NOBUAKI; OZAKI, ATSUSHI
INS SAKURADA MASAHIRO; IIDA MAKOTO; MITAMURA NOBUAKI; OZAKI ATSUSHI
INA JP; JP; JP; JP
PA SHIN-ETSU HANDOTAI CO., LTD.; SAKURADA, MASAHIRO; IIDA, MAKOTO; MITAMURA, NOBUAKI; OZAKI, ATSUSHI
PAS SHINETSU HANDOTAI KK; SAKURADA MASAHIRO; IIDA MAKOTO; MITAMURA NOBUAKI; OZAKI ATSUSHI
PAA JP; JP; JP; JP; JP
TL English; French
LA Japanese
DT Patent
PIT WOA1 PUBL.OF THE INT.APPL. WITH INT.SEARCH REPORT
PI WO 2005001170 A1 20050106
DS RW: BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW AM AZ BY KG KZ MD RU TJ

```
            TM AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PL PT
            RO SE SI SK TR BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG BF BJ
            CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
         W: AE AE AG AL AL AM AM AM AT AT AU AZ AZ BA BB BG BG BR BR BW BY BY BZ
            BZ CA CH CN CN CO CO CR CR CU CU CZ CZ DE DE DK DK DM DZ EC EC EE EE
            EG EG ES ES FI FI GB GD GE GE GH GM HR HR HU HU ID IL IN IS KE KE KG
            KG KP KP KP KR KR KZ KZ KZ LC LK LR LS LS LT LU LV MA MD MD MG MK MN
            MW MX MX MZ MZ NA NI NI NO NZ OM PG PH PH PL PL PT PT RO RU RU SC SD
            SE SG SK SK SL SL SY TJ TJ TM TM TN TR TR TT TT TZ UA UA UG UG US UZ
            UZ VC VN YU YU ZA ZM ZW
AI    WO 2004-JP7349        A  20040528
PRAI  JP 2003-185960        A  20030627    (EDPR 20050120)
OSCA  142:103769

L10   ANSWER 15 OF 16  INPADOC  COPYRIGHT 2007 EPO on STN

LEVEL 2
AN    149817079 INPADOC  ED 20021209  EW 200249  UP 20021209  UW 200249
TI    SILICON SINGLE CRYSTAL WAFER AND A METHOD FOR
      PRODUCING IT.
IN    SAKURADA MASAHIRO; YAMANAKA HIDEKI; OHTA TOMOHIKO
INS   SAKURADA MASAHIRO; YAMANAKA HIDEKI; OHTA TOMOHIKO
INA   JP; JP; JP
PA    SHIN-ETSU HANDOTAI CO., LTD.
PAS   SHINETSU HANDOTAI KK
PAA   JP
DT    Patent
PIT   USBB PATENT (PREVIOUS PRE-GRANT PUBLICATION)
PI    US 6482260            BB 20021119
AI    US 2000-727275        A  20001130
PRAI  US 2000-727275        A  20001130    (EDPR 20010531)
      JP 1998-179710        A  19980611    (EDPR 19991220)
      US 1999-328278        A3 19990608    (EDPR 20010531)

L10   ANSWER 16 OF 16  INPADOC  COPYRIGHT 2007 EPO on STN

LEVEL 1
AN    148232247 INPADOC  ED 20010417  EW 200115  UP 20010417  UW 200115
TI    SILICON SINGLE CRYSTAL WAFER AND METHOD FOR PRODUCING
      IT.
IN    SAKURADA MASAHIRO; YAMANAKA HIDEKI; OHTA TOMOHIKO
INS   SAKURADA MASAHIRO; YAMANAKA HIDEKI; OHTA TOMOHIKO
INA   JP; JP; JP
PA    SHIN-ETSU HANDOTAI CO., LTD.
PAS   SHINETSU HANDOTAI KK
PAA   US
DT    Patent
PIT   USBA PATENT (NO PREVIOUS PRE-GRANT PUBLICATION)
PI    US 6190452            BA 20010220
AI    US 1999-328278        A  19990608
PRAI  JP 1998-179710        A  19980611    (EDPR 19991220)


=> ed his
ED IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> d his

     (FILE 'HOME' ENTERED AT 03:07:26 ON 27 APR 2007)

     FILE 'HCAPLUS, INSPEC, JAPIO, USPATFULL, USPAT2, INPADOC' ENTERED AT
```

```
     03:07:54 ON 27 APR 2007
L1         591728 S (SINGLE OR MONO)(8A)(CRYSTAL?)
L2          17763 S (CZ OR CZOCHARSKI)
L3              0 S (PULL?(6A)RATE#)(8A)(V(2W)MM/MM)
L4              4 S (PULL?(8A)RATE#)(8A)(V(W)MM(W)MM)
L5          69653 S (TEMPERATURE(3W)GRADIENT#)
L6             25 S (GC)(8A)(C(W)MM)
L7             29 S (N(8A)REGION OR N(2W)REGION)(8A)(WHOLE(4A)PLANE)
L8         189808 S (RADIAL(W)DIRECTION#)
L9              1 S L1 AND L2 AND L5 AND L6 AND L7
L10            16 S L1 AND L2 AND L5 AND L6

=>
```

Day : Friday
Date: 4/27/2007

PALM INTRANET

Time: 00:07:44

Inventor Name Search Result

Your Search was:

Last Name = SAKURADA
First Name = MASAHIRO

Application#	Patent#	Status	Date Filed	Title	Inventor Name
08498894	5609682	150	07/06/1995	A METHOD FOR THE PREPARATION OF SILICON SINGLE CRYSTAL	SAKURADA, MASAHIRO
08565100	5667584	150	11/30/1995	METHOD FOR THE PREPARATION OF A SINGLE CRYSTAL OF SILICON WITH DECREASED CRYSTAL DEFECTS	SAKURADA, MASAHIRO
08655810	5817171	150	05/31/1996	APPARATUS AND METHOD FOR PRODUCING SINGLE CRYSTAL USING CZOCHRALSKI TECHNIQUE	SAKURADA, MASAHIRO
08660198	5728211	250	06/03/1996	SILICON SINGLE CRYSTAL WITH LOW DEFECT DENSITY AND METHOD OF PRODUCING SAME	SAKURADA, MASAHIRO
08666654	5704973	150	06/18/1996	AN APPARATUS AND METHOD FOR THE UNIFORM DISTRIBUTION OF CRYSTAL DEFECTS UPON A SILICON SINGLE CRYSTAL	SAKURADA, MASAHIRO
08768282	5730800	150	12/17/1996	FUSED SILICA GLASS CRUCIBLE	SAKURADA, MASAHIRO
08798472	5948163	250	02/10/1997	APPARATUS FOR MANUFACTURING CRYSTALS ACCORDING TO THE CZOCHRALSKI METHOD, AND CRYSTALS MANUFACTURED BY THE MANUFACTURING METHOD	SAKURADA, MASAHIRO
09090400	5938842	150	06/04/1998	METHOD FOR PRODUCING A SINGLE CRYSTAL USING CZOCHRALSKI TECHNIQUE	SAKURADA, MASAHIRO

09125339	6071337	150	08/13/1998	APPARATUS AND METHOD FOR PRODUCING CRYSTALS BY THE CZOCHRALSKI METHOD AND CRYSTALS PRODUCED BY THIS METHOD	SAKURADA, MASAHIRO
09232561	6174364	150	01/15/1999	METHOD FOR PRODUCING SILICON MONOCRYSTAL AND SILICON MONOCRYSTAL WAFER	SAKURADA, MASAHIRO
09328278	6190452	150	06/08/1999	SILICON SINGLE CRYSTAL WAFER AND METHOD FOR PRODUCING IT	SAKURADA, MASAHIRO
09646713	6565822	150	09/21/2000	EPITAXIAL SILICON WAFER, METHOD FOR PRODUCING THE SAME AND SUBTRATE FOR EPITAXIAL SILICON WAFER	SAKURADA, MASAHIRO
09727275	6482260	150	11/30/2000	SILICON SINGLE CRYSTAL WAFER AND A METHOD FOR PRODUCING IT	SAKURADA, MASAHIRO
10204935	6913646	150	08/27/2002	SILICON SINGLE CRYSTAL WAFER AND METHOD FOR PRODUCING SILICON SINGLE CRYSTAL	SAKURADA, MASAHIRO
10312921	6893499	150	12/26/2002	SILICON SINGLE CRYSTAL WAFER AND METHOD FOR MANUFACTURING THE SAME	SAKURADA, MASAHIRO
10500580	7129123	150	07/01/2004	AN SOI WAFER AND A METHOD FOR PRODUCING AN SOI WAFER	SAKURADA, MASAHIRO
10512470	Not Issued	89	10/26/2004	A SILICON SINGLE CRYSTAL WAFER, AN EPITAXIAL WAFER AND A METHOD FOR PRODUCING A SILICON SINGLE CRYSTAL	SAKURADA, MASAHIRO
10516347	Not Issued	93	11/30/2004	GRAPHITE HEATER FOR PRODUCING SINGLE CRYSTAL, APPARATUS FOR PRODUCING SINGLE CRYSTAL, AND METHOD FOR PRODUCING SINGLE CRYSTAL	SAKURADA, MASAHIRO
10530557	Not Issued	71	04/07/2005	Annealed wafer and method for manufacturing the same	SAKURADA, MASAHIRO

10538878	7214268	150	06/14/2005	METHOD OF PRODUCING P-DOPED SILICON SINGLE CRYSTAL AND P-DOPED N-TYPE SILICON SINGLE CRYSTAL WAFER	SAKURADA, MASAHIRO
10542376	Not Issued	30	07/14/2005	AN SOI WAFER AND A METHOD FOR PRODUCING THE SAME	SAKURADA, MASAHIRO
10546693	Not Issued	30	08/22/2005	An soi wafer and a method for producing the same	SAKURADA, MASAHIRO
10560581	Not Issued	25	02/02/2006	Method for producing a single crystal and a single crystal	SAKURADA, MASAHIRO
10561205	Not Issued	30	02/03/2006	A method for producing a single crystal and a single crystal	SAKURADA, MASAHIRO
10561865	Not Issued	100	02/20/2006	METHOD FOR PRODUCING SINGLE CRYSTAL AND SINGLE CRYSTAL	SAKURADA, MASAHIRO
11664436	Not Issued	19	01/01/0001	Apparatus for producing a single crystal	SAKURADA, MASAHIRO

Inventor Search Completed: No Records to Display.

Search Another: Inventor **Last Name** Sakurada **First Name** Masahiro Search

To go back use Back button on your browser toolbar.

Back to PALM | ASSIGNMENT | OASIS | Home page

Day : Friday
Date: 4/27/2007

PALM INTRANET

Time: 00:08:05

Inventor Name Search Result

Your Search was:

Last Name = IIDA
First Name = MAKOTO

Application#	Patent#	Status	Date Filed	Title	Inventor Name
05810759	4163215	150	06/28/1977	SAFETY LOCK SYSTEM	IIDA, MAKOTO
05895605	4227577	150	04/12/1978	FIRE-EXTINGUISHING SYSTEM	IIDA, MAKOTO
06336323	4409341	150	12/31/1981	COMPOSITION FOR FIRE RETARDANT URETHANE FOAM	IIDA, MAKOTO
06880012	4734448	150	06/30/1986	PROPYLENE POLYMER COMPOSITION	IIDA, MAKOTO
07219267	Not Issued	166	07/15/1988	ELECTROCONDUCTIVE RESIN COMPOSITION FOR MOLDING AND ELECTROMAGNETIC WAVE INTERFERENCE SHIELD STRUCTURE MOLDED FROM THE COMPOSITION	IIDA, MAKOTO
07538113	5071223	150	06/14/1990	CIRCUIT STRUCTURE FORMED BY INSERT MOLDING OF ELECTRIC AND/OR OPTICAL TRANSMISSION MEDIUM	IIDA, MAKOTO
07592545	Not Issued	166	10/02/1990	FOCUS DRAW-IN METHOD FOR OPTICAL DISC DEVICE	IIDA, MAKOTO
07769348	6156427	250	10/02/1991	ELECTROCONDUCTIVE RESIN COMPOSITION FOR MOLDING AND ELECTROMAGNETIC WAVE INTERFERENCE SHIELD STRUCTURE MOLDED FROM THE COMPOSITION	IIDA, MAKOTO
07785000	5179601	150	10/30/1991	METHOD OF MANUFACTURING CIRCUIT STRUCTURE BY INSERT MOLDING OF ELECTRIC AND/OR OPTICAL TRANSMISSION MEDIUM	IIDA, MAKOTO

07866166	Not Issued	166	06/29/1992	OPTICAL DISK SYSTEM	IIDA, MAKOTO
07939045	Not Issued	166	09/03/1992	FOCUS DRAW-IN SYSTEM FOR OPTICAL DISC DEVICE	IIDA, MAKOTO
08137211	5414682	150	10/18/1993	FOCUS DRAW-IN SYSTEM FOR OPTICAL DISC DEVICE	IIDA, MAKOTO
08172413	5491301	150	12/22/1993	SHIELDING METHOD AND CIRCUIT BOARD EMPLOYING THE SAME	IIDA, MAKOTO
08279318	5461599	150	07/22/1994	OPTICAL DISK SYSTEM	IIDA, MAKOTO
08809295	Not Issued	161	03/27/1997	PROPYLENE RESIN COMPOSITION FOR AUTOMOTIVE INTERIOR PARTS, AND AUTOMOTIVE INTERIOR PARTS	IIDA, MAKOTO
08827060	Not Issued	161	03/26/1997	PRESS WORKING METHOD AND EQUIPMENT THEREFOR	IIDA, MAKOTO
08915397	5871578	150	08/20/1997	METHODS FOR HOLDING AND PULLING SINGLE CRYSTAL	IIDA, MAKOTO
08923963	5911821	150	09/05/1997	METHOD OF HOLDING A MONOCRYSTAL, AND METHOD OF GROWING THE SAME	IIDA, MAKOTO
08929670	5964941	150	09/15/1997	CRYSTAL PULLING METHOD AND APPARATUS	IIDA, MAKOTO
08944869	5882397	150	10/06/1997	CRYSTAL PULLING METHOD	IIDA, MAKOTO
09039830	6053975	150	03/16/1998	CRYSTAL HOLDING APPARATUS	IIDA, MAKOTO
09101941	6120749	150	07/17/1998	SILICON SINGLE CRYSTAL WITH NO CRYSTAL DEFECT IN PERIPHERAL PART OF WAFER AND PROCESS FOR PRODUCING THE SAME	IIDA, MAKOTO
09109530	5968264	150	07/02/1998	METHOD AND APPARATUS FOR MANUFACTURING A SILICON SINGLE CRYSTAL HAVING FEW CRYSTAL DEFECTS, AND A SILICON SINGLE CRYSTAL AND SILICON WAFERS MANUFACTURED BY THE SAME	IIDA, MAKOTO
09140288	5948164	250	08/25/1998	SEED CRYSTAL HOLDER	IIDA, MAKOTO

09173931	6027562	150	10/16/1998	METHOD FOR PRODUCING A SILICON SINGLE CRYSTAL HAVING FEW CRYSTAL DEFECTS, AND A SILICON SINGLE CRYSTAL AND SILICON WAFERS PRODUCED BY THE METHOD	IIDA, MAKOTO
09188490	6066306	150	11/09/1998	SILICON SINGLE CRYSTAL WAFER HAVING FEW CRYSTAL DEFECTS, AND METHOD FOR PRODUCING THE SAME	IIDA, MAKOTO
09194232	6445872	150	11/23/1998	RECORDING AND REPRODUCING APPARATUS FOR RECORDING DIGITAL BROADAST COMPRESSION-CODED DATA T OF VIDEO SIGNALS OF A MULTIPLICITY OF CHANNELS	IIDA, MAKOTO
09197130	6048395	150	11/20/1998	METHOD FOR PRODUCING A SILICON SINGLE CRYSTAL HAVING FEW CRYSTAL DEFECTS	IIDA, MAKOTO
09264514	6191009	150	03/08/1999	METHOD FOR PRODUCING SILICON SINGLE CRYSTAL WAFER AND SILICON SINGLE CRYSTAL WAFER	IIDA, MAKOTO
09294323	6191675	150	04/20/1999	HIGH VOLTAGE TRANSFORMER AND IGNITION TRANSFORMER USING THE SAME	IIDA, MAKOTO
09313856	6299982	150	05/18/1999	SILICON SINGLE CRYSTAL WAFER AND METHOD FOR PRODUCING SILICON SINGLE CRYSTAL WAFER	IIDA, MAKOTO
09318055	6077343	150	05/25/1999	SILICON SINGLE CRYSTAL WAFER HAVING FEW DEFECTS WHEREIN NITROGEN IS DOPED AND A METHOD FOR PRODUCING IT	IIDA, MAKOTO
09329615	6197109	150	06/10/1999	METHOD FOR PRODUCING LOW DEFECT SILICON SINGLE CRYSTAL DOPED WITH NITROGEN	IIDA, MAKOTO
09359078	6159438	150	07/22/1999	METHOD AND APPARATUS FOR MANUFACTURING A	IIDA, MAKOTO

				SILICON SINGLE CRYSTAL HAVING FEW CRYSTAL DEFECTS, AND A SILICON SINGLE CRYSTAL AND SILICON WAFERS MANUFACTURED BY THE SAME	
09454841	6120599	150	12/06/1999	SILICON SINGLE CRYSTAL WAFER HAVING FEW CRYSTAL DEFECTS, AND METHOD FOR PRODUCING THE SAME	IIDA, MAKOTO
09459849	6120598	150	12/13/1999	METHOD FOR PRODUCING A SILICON SINGLE CRYSTAL HAVING FEW CRYSTAL DEFECTS, AND A SILICON SINGLE CRYSTAL AND SILICON WAFERS PRODUCED BY THE METHOD	IIDA, MAKOTO
09492001	6348180	150	01/26/2000	SILICON SINGLE CRYSTAL WAFER HAVING FEW CRYSTAL DEFECTS	IIDA, MAKOTO
09572788	6780067	150	05/17/2000	COMBINED INTEGRAL MOLDED PRODUCT USING PRE-MOLDED MEMBER	IIDA, MAKOTO
09577252	6261361	150	05/19/2000	Silicon single crystal wafer having few defects wherein nitrogen is doped and a method for producing it	IIDA, MAKOTO
09600033	6334896	150	07/11/2000	SINGLE-CRYSTAL SILICON WAFER HAVING FEW CRYSTAL DEFECTS AND METHOD FOR MANUFACTURING THE SAME	IIDA, MAKOTO
09661985	6364947	150	09/14/2000	Method and apparatus for manufacturing a silicon single crystal Having few crystal defects, and a silicon single crystal and silicon wafers manufactured by the same	IIDA, MAKOTO
09828206	6401643	250	04/09/2001	SEWN COVER ASSEMBLY AND PRODUCT FOAMED THEREWITH	IIDA, MAKOTO
09830386	6544332	150	04/26/2001	METHOD FOR MANUFACTURING SILICON SINGLE CRYSTAL, SILICON SINGLE CRYSTAL	IIDA, MAKOTO

				MANUFACTURED BY THE METHOD, AND SILICON WAFER	
09868058	6548035	150	06/14/2001	SILICON SINGLE CRYSTAL WAFER FOR EPITAXIAL WAFER, EPITAXIAL WAFER, AND METHODS FOR PRODUCING THE SAME AND EVALUATING THE SAME	IIDA, MAKOTO
09869912	6843847	150	07/09/2001	SILICON SINGLE CRYSTAL WAFER, METHOD FOR PRODUCING THE SAME AND SOI WAFER	IIDA, MAKOTO
09869932	6544490	150	07/09/2001	SILICON WAFER AND PRODUCTION METHOD THEREOF AND EVALUATION METHOD FOR SILICON WAFER	IIDA, MAKOTO
09884784	Not Issued	161	06/19/2001	Hybrid housing of metal board and synthetic resin	IIDA, MAKOTO
09936920	6599360	150	09/20/2001	SILICON WAFER, METHOD FOR DETERMINING PRODUCTION CONDITIONS OF SILICON SINGLE CRYSTAL AND METHOD FOR PRODUCING SILICON WAFER	IIDA, MAKOTO
10009910	Not Issued	124	12/12/2001	Silicon wafer, silicon epitaxial wafer, anneal wafer and method for producing them	IIDA, MAKOTO
10130431	6841450	150	05/17/2002	ANNEALED WAFER MANUFACTURING METHOD AND ANNEALED WAFER	IIDA, MAKOTO

Search and Display More Records.

Search Another: Inventor Last Name: lida First Name: Makoto Search

To go back use Back button on your browser toolbar.

Back to PALM | ASSIGNMENT | OASIS | Home page

Day : Friday
Date: 4/27/2007

PALM INTRANET

Time: 00:08:31

Inventor Name Search Result

Your Search was:

Last Name = MITAMURA
First Name = NOBUAKI

Application#	Patent#	Status	Date Filed	Title	Inventor Name
07557574	5030017	150	07/24/1990	ROLLING BEARING	MITAMURA, NOBUAKI
07560445	5084116	150	07/31/1990	ROLLING CONTACT ELEMENT STEEL AND ROLLING BEARING MADE THEREOF	MITAMURA, NOBUAKI
07572480	5085733	150	08/23/1990	ROLLING CONTACT PARTS STEEL AND ROLLING BEARING MADE THEREOF	MITAMURA, NOBUAKI
07915503	Not Issued	161	07/20/1992	BALL AND ROLLER BEARING	MITAMURA, NOBUAKI
07946638	5338377	150	09/18/1992	BALL-AND-ROLLER BEARING	MITAMURA, NOBUAKI
08134588	5427457	150	10/12/1993	ROLLING BEARING	MITAMURA, NOBUAKI
08242668	5413643	150	05/13/1994	ROLLING BEARING	MITAMURA, NOBUAKI
08374179	Not Issued	166	01/18/1995	TOROIDAL-TYPE CONTINUOUSLY VARIABLE TRANSMISSION	MITAMURA, NOBUAKI
08512419	5660647	150	08/08/1995	ROLLING BEARING WITH IMPROVED WEAR RESISTANCE	MITAMURA, NOBUAKI
08519643	5626974	150	08/25/1995	ROLLING BEARING FOR USE UNDER HIGH TEMPERATURE CONDITIONS	MITAMURA, NOBUAKI
08536773	5672014	150	09/29/1995	ROLLING BEARINGS	MITAMURA, NOBUAKI
08542828	5853660	150	10/13/1995	A ROLLING BEARING MADE OF IMPROVED BEARING STEEL	MITAMURA, NOBUAKI
08683195	5958155	150	07/18/1996	PROCESS FOR PRODUCING	MITAMURA,

				THIN FILM	NOBUAKI
08745635	5855531	150	11/08/1996	COMPONENT PARTS OF A TOROIDAL-TYPE CONTINUOUSLY VARIABLE TRANSMISSION HAVING IMPROVED LIFE	MITAMURA, NOBUAKI
08763883	5887015	150	12/11/1996	HEATER MECHANISM FOR CRYSTAL PULLING APPARATUS	MITAMURA, NOBUAKI
08877950	5989694	150	06/17/1997	ROLLING BEARING	MITAMURA, NOBUAKI
08955294	Not Issued	164	10/21/1997	ROLLING BEARING MADE OF IMPROVED BEARING STEEL	MITAMURA, NOBUAKI
09098980	6171414	150	06/17/1998	ROLLING BEARING	MITAMURA, NOBUAKI
09108174	6174257	150	07/01/1998	TOROIDAL TYPE CONTINUOUSLY VARIABLE TRANSMISSION	MITAMURA, NOBUAKI
09181911	6174258	150	10/29/1998	TOROIDAL-TYPE CONTINUOUSLY VARIABLE TRANSMISSION	MITAMURA, NOBUAKI
09183630	6066068	150	10/30/1998	TOROIDAL TYPE CONTINUOUSLY VARIABLE TRANSMISSION	MITAMURA, NOBUAKI
09187607	6165100	150	11/06/1998	HIGH-CLEANNESS STEEL AND TOROIDAL TYPE CONTINUOUSLY VARIABLE TRANSMISSION INCLUDING COMPONENTS SUCH AS INPUT/OUTPUT DISCS, POWER ROLLER AND CAM DISC USING THE HIGH-CLEANNESS STEEL	MITAMURA, NOBUAKI
09226032	6174085	150	01/05/1999	LINEAR GUIDE BEARING DEVICE	MITAMURA, NOBUAKI
09235052	6196946	150	01/21/1999	POWER ROLLER BEARING OF TOROIDAL TYPE CONTINUOUSLY VARIABLE TRANSMISSION AND METHOD OF MANUFACTURING POWER ROLLER BEARING OF TOROIDAL TYPE CONTINUOUSLY VARIABLE TRANSMISSION	MITAMURA, NOBUAKI

09245931	Not Issued	161	02/08/1999	TEMPERATURE-INDEPENDENT OPTICAL ELEMENT	MITAMURA, NOBUAKI
09272731	6210542	150	11/04/1998	PROCESS FOR PRODUCING THIN FILM, THIN FILM AND OPTICAL INSTRUMENT INCLUDING THE SAME	MITAMURA, NOBUAKI
09339238	6332714	150	06/24/1999	INDUCTION-HARDENED ROLLING BEARING DEVICE	MITAMURA, NOBUAKI
09344380	6328669	150	06/25/1999	TOROIDAL TYPE CONTINUOUSLY VARIABLE TRANSMISSION	MITAMURA, NOBUAKI
09349204	6176806	150	07/07/1999	CAM DISK FOR TOROIDAL TYPE CONTINUOUSLY VARIABLE TRANSMISSION	MITAMURA, NOBUAKI
09358554	6478894	150	07/22/1999	ROLLING BEARING	MITAMURA, NOBUAKI
09379748	6152605	150	08/24/1999	BALL BEARING	MITAMURA, NOBUAKI
09401917	6358440	150	09/23/1999	PROCESS FOR PRODUCING THIN FILM, THIN FILM AND OPTICAL INSTRUMENT INCLUDING THE SAME	MITAMURA, NOBUAKI
09697179	6829053	150	10/27/2000	AIRGAP TYPE ETALON AND APPARATUS UTILIZING THE SAME	MITAMURA, NOBUAKI
09886122	6413188	150	06/22/2001	TOROIDAL TYPE CONTINUOUSLY VARIABLE TRANSMISSION	MITAMURA, NOBUAKI
09939566	6646805	150	08/28/2001	APPARATUS FOR VARIABLE WAVELENGTH DISPERSION AND WAVELENGTH DISPERSION SLOPE	MITAMURA, NOBUAKI
09957413	6426022	150	09/20/2001	PROCESS FOR PRODUCING THIN FILM, THIN FILM AND OPTICAL INSTRUMENT INCLUDING THE SAME	MITAMURA, NOBUAKI
09984396	6807335	150	10/30/2001	WAVELENGTH CHARACTERISTIC VARIABLE APPARATUS	MITAMURA, NOBUAKI
10061307	6826318	150	02/04/2002	VARIABLE POLARIZATION PLANE ROTATOR AND OPTICAL DEVICE USING SAME	MITAMURA, NOBUAKI
10164438	6900940	150	06/10/2002	OPTICAL APPARATUS AND	MITAMURA,

				DEVICE	NOBUAKI
10278868	7200297	150	10/24/2002	DEVICE USING A VIRTUALLY-IMAGED PHASED ARRAY (VIPA) WITH AN IMPROVED TRANSMISSION WAVE CHARACTERISTIC OF OUTPUT LIGHT	MITAMURA, NOBUAKI
10286779	6862126	150	11/04/2002	TRANSMISSION WAVELENGTH CHARACTERISTICS VARIABLE OPTICAL ELEMENT, AND WAVELENGTH CHARACTERISTICS VARIABLE APPARATUS, OPTICAL AMPLIFIER, OPTICAL TRANSMISSION SYSTEM, AND CONTROL METHOD OF TRANSMISSION WAVELENGTH CHARACTERISTICS, USING SAME	MITAMURA, NOBUAKI
10310900	7137741	150	12/06/2002	ROLLING BEARING	MITAMURA, NOBUAKI
10340842	6909537	150	01/13/2003	DISPERSION COMPENSATOR WHOSE TRANSMISSION BAND IS FLATTENED	MITAMURA, NOBUAKI
10341380	6807008	150	01/14/2003	WAVELENGTH DISPERSION GENERATION APPARATUS, MULTI-FACED MIRROR USED FOR WAVELENGTH DISPERSION GENERATION APPARATUS, AND METHOD FOR MANUFACTURING THEREOF	MITAMURA, NOBUAKI
10351376	7016096	150	01/27/2003	TRANSMISSION WAVELENGTH CHARACTERISTICS VARIABLE OPTICAL ELEMENT, AND WAVELENGTH CHARACTERISTICS VARIABLE APPARATUS, OPTICAL AMPLIFIER, AND OPTICAL TRANSMISSION SYSTEM, USING SAME	MITAMURA, NOBUAKI
10410342	7037386	150	04/10/2003	ROLLING BEARING FOR	MITAMURA,

				CONTINUOUSLY VARIABLE TRANSMISSION	NOBUAKI
10414308	6923576	150	04/16/2003	ROLLING BEARING AND BELT CONTINUOUSLY VARIABLE TRANSMISSION	MITAMURA, NOBUAKI
10500580	7129123	150	07/01/2004	AN SOI WAFER AND A METHOD FOR PRODUCING AN SOI WAFER	MITAMURA, NOBUAKI
10510695	7179330	150	10/08/2004	METHOD OF MANUFACTURING SILICON SINGLE CRYSTAL, SILICON SINGLE CRYSTAL AND SILICON WAFER	MITAMURA, NOBUAKI
10512470	Not Issued	89	10/26/2004	A SILICON SINGLE CRYSTAL WAFER, AN EPITAXIAL WAFER AND A METHOD FOR PRODUCING A SILICON SINGLE CRYSTAL	MITAMURA, NOBUAKI

Search and Display More Records.

Search Another: Inventor **Last Name** Mitamura **First Name** Nobuaki Search

To go back use Back button on your browser toolbar.

Back to PALM | ASSIGNMENT | OASIS | Home page

Day : Friday
Date: 4/27/2007

PALM INTRANET

Time: 00:08:53

Inventor Name Search Result

Your Search was:

Last Name = OZAKI
First Name = ATSUSHI

Application#	Patent#	Status	Date Filed	Title	Inventor Name
07109722	4794263	150	10/19/1987	APPARATUS FOR MEASURING CRYSTAL DIAMETER	OZAKI, ATSUSHI
07174583	4973377	250	03/28/1988	CRYSTAL DIAMETER CONTROLLING METHOD	OZAKI, ATSUSHI
07200125	Not Issued	161	05/26/1988	SEMICONDUCTOR MEMORY DEVICE WITH AN IMPROVED CHARGE TRAP REGION	OZAKI, ATSUSHI
07222438	4915775	150	07/21/1988	APPARATUS FOR ADJUSTING INITIAL POSISITON OF MELT SURFACE	OZAKI, ATSUSHI
07315084	4985641	150	02/24/1989	SEMICONDUCTOR INTEGRATED CIRCUIT DEVICE HAVING SELECTABLE OPERATIONAL FUNCTIONS	OZAKI, ATSUSHI
07614760	5131974	150	11/16/1990	METHOD OF CONTROLLING OXYGEN CONCENTRATION IN SINGLE CRYSTAL AND AN APPARATUS THEREFOR	OZAKI, ATSUSHI
07669247	5169977	150	03/14/1991	PROCESS FOR PURIFYING DIMETHYL-2,6-NAPHTHALENE DICARBOXYLATE	OZAKI, ATSUSHI
07776774	5223078	150	10/15/1991	CONICAL PORTION GROWTH CONTROL METHOD AND APPARATUS	OZAKI, ATSUSHI
07825214	5282166	150	01/24/1992	SERIAL ACCESS MEMORY COMPRISING DISCONNECTING CIRCUIT BETWEEN SERIAL BUS LINES AND PREAMPLIFIER	OZAKI, ATSUSHI
07829964	Not Issued	166	02/03/1992	METHOD FOR MEASURING THE DIAMETER OF SINGLE CRYSTAL INGOT	OZAKI, ATSUSHI
07933375	5370077	250	08/24/1992	SINGLE CRYSTAL ROD PULL-UP GROWING APPARATUS	OZAKI, ATSUSHI

08038102	5413847	150	03/30/1993	PREPREG AND COMPOSITE	OZAKI, ATSUSHI
08059432	Not Issued	166	05/04/1993	METHOD FOR MEASURING THE DIAMETER OF A SINGLE CRYSTAL INGOT	OZAKI, ATSUSHI
08159501	5484326	150	11/30/1993	SEMICONDUCTOR INGOT MACHINING METHOD	OZAKI, ATSUSHI
08187769	5405285	250	01/28/1994	MACHINING ERROR CORRECTION APPARATUS	OZAKI, ATSUSHI
08302763	Not Issued	166	10/05/1994	PREPREGS, PROCESSES FOR THEIR PRODUCTION, AND COMPOSITE LAMINATES	OZAKI, ATSUSHI
08377688	Not Issued	166	01/25/1995	METHOD FOR MEASURING THE DIAMETER OF A SINGLE CRYSTAL INGOT	OZAKI, ATSUSHI
08487507	5584930	150	06/07/1995	METHOD FOR MEASURING THE DIAMETER OF A SINGLE CRYSTAL INGOT	OZAKI, ATSUSHI
08562623	Not Issued	166	11/24/1995	PREPREGS, PROCESSES FOR THEIR PRODUCTION, AND COMPOSITE LAMINATES	OZAKI, ATSUSHI
08682761	5985431	150	12/10/1996	PREPREG, AND A FIBER REINFORCED COMPOSITE MATERIAL	OZAKI, ATSUSHI
08760963	5888299	150	12/05/1996	APPARATUS FOR ADJUSTING INITIAL POSITION OF MELT SURFACE	OZAKI, ATSUSHI
08763888	5851286	250	12/11/1996	CRYSTAL PULLING APPARATUS	OZAKI, ATSUSHI
08767067	Not Issued	169	12/16/1996	METHOD FOR MEASURING THE DIAMETER OF SINGLE CRYSTAL INGOT	OZAKI, ATSUSHI
08827105	5876496	150	03/17/1997	METHOD FOR FEEDING A GRANULAR RAW MATERIAL AND A FEEDING APPARATUS	OZAKI, ATSUSHI
08999931	6027794	150	08/08/1997	PREPREGS, PROCESSES FOR THEIR PRODUCTION, AND COMPOSITE LAMINATES	OZAKI, ATSUSHI
09226106	6010568	150	01/07/1999	METHOD FOR ADJUSTING INITIAL POSITION OF MELT SURFACE	OZAKI, ATSUSHI
09926464	6888236	150	01/10/2002	CERAMIC SUBSTRATE FOR MANUFACTURE/INSPECTION OF SEMICONDUCTOR	OZAKI, ATSUSHI
10523020	Not	41	02/02/2005	Method for treating severe heart	OZAKI,

	Issued			failure and medicament therefor	ATSUSHI
10560581	Not Issued	25	02/02/2006	Method for producing a single crystal and a single crystal	OZAKI, ATSUSHI
10561205	Not Issued	30	02/03/2006	A method for producing a single crystal and a single crystal	OZAKI, ATSUSHI
10561865	Not Issued	100	02/20/2006	METHOD FOR PRODUCING SINGLE CRYSTAL AND SINGLE CRYSTAL	OZAKI, ATSUSHI
10759083	Not Issued	161	01/20/2004	Ceramic substrate for manufacture/inspection of semiconductor	OZAKI, ATSUSHI
60448878	Not Issued	159	02/24/2003	Method for treating severe heart failure and medicament therefor	OZAKI, ATSUSHI

Inventor Search Completed: No Records to Display.

Search Another: Inventor **Last Name** Ozaki **First Name** Atsushi Search

To go back use Back button on your browser toolbar.

Back to PALM | ASSIGNMENT | OASIS | Home page